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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,072	06/05/2000	Ahmed Saifuddin	QCPA000320	8110

23696 7590 08/24/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

TORRES, JOSEPH D

ART UNIT PAPER NUMBER

2133

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/588,072	Applicant(s) SAIFUDDIN ET AL.	
	Examiner Joseph D. Torres	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-34 is/are pending in the application.
- 4a) Of the above claim(s) 16-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 16-34 drawn to an invention nonelected without traverse in the Response to Restriction Requirement filed 12 February 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Response to Arguments

2. Applicant's arguments with respect to claims 9-15 have been considered but are moot in view of the new ground(s) of rejection. Note: Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 9-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jarvinen; Kari et al. (US 6170073 B1, hereafter referred to as Jarvinen).

35 U.S.C. 102(e) rejection of claim 1

Jarvinen teaches a channel encoder for receiving a plurality of information bits (Figure 10 of Jarvinen teaches a channel encoder for receiving a plurality of information bits from a speech encoder), the plurality of information bits containing different classes of information bits (the channel encoder of Figure 7 in Jarvinen contains class 1A, 1B and 2 bits); determining an outer quality metric in accordance with the plurality of information bits (Channel Encoder 930 in Figure 10 of Jarvinen determines a CRC outer quality metric using 8-bit CRC generator 908 in accordance with the plurality of 244 information bits received from the speech encoder) and an inner quality metric in accordance with at least one group of information bits of a particular class (Channel Encoder 904 in Figure 10 of Jarvinen determines a CRC inner quality metric using 3-bit CRC generator 206 in accordance with the group of information bits comprising class 1A bits), wherein the outer quality metric and the inner quality metric are determined independently (the 3-bit CRC generator 206 in Figure 10 of Jarvinen only encodes the 50 Class 1A bits and does not require any of the CRC bits from outer quality 8-bit CRC generator 908; hence the inner 3-bit CRC generated by inner quality metric CRC generator 206 in Figure 10 is entirely independent of the outer quality 8-bit CRC metric from 8-bit CRC generator 908); and forming a frame comprising the plurality of information bits, the outer quality metric (Figure 10 of Jarvinen teaches that a 456 bit/20ms frame is formed at the output

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of the encoding device of figure 10), and the inner quality metric, the outer quality metric being used for protection of the plurality of information bits and the inner quality metric being used for protection of the at least one group of information bits of the particular class (col. 8, lines 12-14 and outer CRC quality metric generator 504 of Figure 5 in Jarvinen teach that an outer quality CRC metric generator 504 generates outer quality CRC metric codes for all of the bits of the received speech frame by dividing the received speech frame into N groups and applying a different CRC metric to each group; the 3-bit inner CRC quality metric generator 206 in Figure 10 of Jarvinen only encodes the 50 Class 1A bits; hence Jarvinen teaches the 3-bit inner CRC quality metric from CRC quality metric generator 206, the outer quality CRC metric from outer quality CRC metric generator 504 being used for protection of the plurality of information bits comprising the speech frame and the 3-bit inner CRC quality metric being used for protection of the group of information bits comprising class 1A bits).

35 U.S.C. 102(e) rejection of claim 10.

Outer CRC quality metric generator 504 of Figure 5 in Jarvinen produces a CRC quality metric that is a cyclic redundancy check (CRC).

35 U.S.C. 102(e) rejection of claim 11.

CRC code is a parity check code since it is a systematic code (Note: by definition parity is the redundant bits of a systematic code).

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35 U.S.C. 102(e) rejection of claim 12.

3-bit inner CRC quality metric generator 206 in Figure 10 of Jarvinen produces a CRC quality metric that is a cyclic redundancy check (CRC).

35 U.S.C. 102(e) rejection of claim 13.

CRC code is a parity check code since it is a systematic code (Note: by definition parity is the redundant bits of a systematic code).

35 U.S.C. 102(e) rejection of claim 14.

Jarvinen teaches transmitting the frame to a destination (Transmitter 506 in Figure 5 of Jarvinen is a transmitter for transmitting the frame to a destination); receiving the frame at the destination (Receiver 402 in Figure 4 of Jarvinen is a receiver for receiving the frame at the destination); and determining whether the frame has been correctly received based on the outer quality metric contained in the frame (col. 4, lines 37-48 in Jarvinen teach that outer CRC quality metric generator 504 of Figure 5 in Jarvinen is used to determine a quality parameter B; Note: col. 4, lines 37-48 in Jarvinen teach that if B=0, then the frame has no errors and has been correctly received; hence Jarvinen teaches determining whether the frame has been correctly received based on the outer CRC quality metric contained in the frame).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jarvinen; Kari et al. (US 6170073 B1, hereafter referred to as Jarvinen) in view of Tanaka; Mitsugu (US 5740187 A).

35 U.S.C. 103(a) rejection of claim 15.

Jarvinen, substantially teaches the claimed invention described in claims 9-14 (as rejected above). In addition, Jarvinen teaches if the frame has not been received correctly (col. 4, lines 37-48 in Jarvinen teach that outer CRC quality metric generator 504 of Figure 5 in Jarvinen is used to determine a quality parameter B; Note: col. 4, lines 37-48 in Jarvinen teach that if $B > 0$, then the frame has errors and has not been correctly received).

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However Jarvinen does not explicitly teach the specific details of a decoder for decoding the ECC product code produced by the product encoder of Figure 10 in the Jarvinen patent.

Tanaka, in an analogous art, teaches a typical decoder required for decoding a product code such as the product code taught in Figure 10 of the Jarvinen patent. Tanaka teaches that if the frame has not been received correctly, determining whether the at least one group of information bits has been received correctly based on the inner quality metric contained in the frame; and recovering the at least one group of information bits if the inner quality metric indicates that the at least one group of information bits has been received correctly (Inner Code Decoding Block in Figure 1 of Tanaka teaches a means for determining whether the at least one group of information bits has been received correctly based on the inner quality metric contained in the frame and recovering the at least one group of information bits if the inner quality metric indicates that the at least one group of information bits has been received correctly prior to sending the data to the Outer Code Decoding Block in Figure 1 of Tanaka used for recovering the original information bits). The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to combine the Tanaka patent with the teachings in the Jarvinen patents since the decoder in the Tanaka patent is the required prior art decoder for decoding a product code such as the product code taught in Figure 10 of the Jarvinen patent (Note: the decoder of Figure 1 in Tanaka decodes information in reverse order from the encoding operation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jarvinen with the teachings of Tanaka by including use of a decoder for decoding the ECC product code produced by the product encoder of Figure 10 in the Jarvinen patent. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a decoder for decoding the ECC product code produced by the product encoder of Figure 10 in the Jarvinen patent would have provided the opportunity to decode the product encoded ECC frames in the Jarvinen patent since the decoder in the Tanaka patent is the required decoder for decoding the product encoded ECC frames taught in the Jarvinen patent (Note: the decoder of Figure 1 in Tanaka decodes information in reverse order from the encoding operation).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

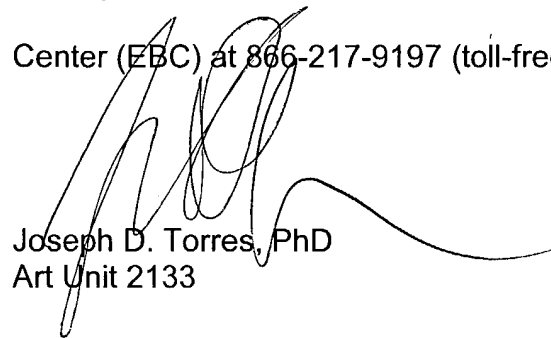
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
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